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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/801,714

03/17/2004

Masaaki Kuranuki

P25066

1872

7055

7590

06/23/2006

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EXAMINER

CONNOLLY, MARK A

ART UNIT

PAPER NUMBER

2115

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/801,714		KURANUKI, MASA AKI	
	Examiner		Art Unit	
	Mark Connolly		2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/17/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-15 have been presented for examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 7 recites the limitation "the first operation mode" in line 2. There is insufficient antecedent basis for this limitation in the claim. For examination purposes, "the first operation mode" has been interpreted as "a first operation mode."

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4, 7-10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobovici et al [Iaco] US Pat No 6704876 in view of Ishii US Pat No 6940359.

6. Referring to claim 1, Iaco teaches the processor comprising:

- a. controlling the frequency supplied from a clock oscillator so that energy consumption to process a predetermined amount of data takes a value within a predetermined range including a minimum value of the energy consumption, the energy consumption being defined by the frequency, a power supply voltage and a power supply efficiency of the power supply circuit [fig. 4 and col. 1 lines 40-62 and col. 3 lines 21-

27]. It is inherent that in addition to frequency, a power supply voltage and the efficiency of the power supply have a direct impact on energy consumption.

Although Iaco teaches minimizing power consumption by adjusting a frequency, it is not explicitly taught how the adjustments means are performed. Ishii explicitly teaches a well known means of adjusting a frequency comprising a voltage controlled oscillator (VCO) and adjusting a power supply voltage from a power supply in accordance with instructions from a processor [col. 3 lines 52-67]. It would have been obvious to one of ordinary skill in the art to include the VCO and adjusting means taught by Ishii because it provides a well known means to adjust a frequency to a processor as is required in Iaco.

7. Referring to claim 2, Iaco teaches estimating power dissipation (i.e. power consumption) to execute instructions over a given period of time [col. 1 lines 40-46]. This is interpreted as calculating energy consumption to process a predetermined amount of data. Iaco further teaches a controller for controlling a frequency [28 fig. 1 and col. 3 lines 25-26] and while Ishii teaches a controllers for controlling voltage and frequency [col. 3 lines 52-67]. Although these controllers are separeate, it would have been obvious to include them into a single controller in order to reduce the number of separate components within the thereby reducing complexity and cost.

8. Referring to claim 4, Iaco teaches operating in different operation modes. Furthermore, Iaco teaches a minimum range within the operating modes including a minimum value of energy consumption [68 fig. 4, col. 3 lines 21-27 and col. 1 lines 57-62].

9. Referring to claim 7, Iaco teaches a computer system which comprises a means to adjust an operation mode of a processor. It is well known in the art that computer systems are used to perform processes such as downloading, displaying and recording images. It is obvious that

when performing one of these processes, the processor would operate with respect to a particular mode associated with the Iaco-Ishii system which is herein interpreted as a first operation mode.

10. Referring to claims 8-10, 12 and 15, these are rejected on the same basis as set hereinabove.

11. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iaco and Ishii as applied to claims 1, 2, 4, 7-10, 12 and 15 above, and further in view of Altmejd et al [Altmejd] US Pat No 6795927.

12. Referring to claim 3, although the Iaco-Ishii system teaches adjusting voltage and frequency to adjust energy consumption, it is not taught how the adjustments are decided upon. In other words, it is not explicitly taught how the system determines what new values to choose for the frequency and voltage. Altmejd teaches performance state tables (PSTs) which define an operating frequency and voltage for which a processor should operate at [col. 10 lines 38-44]. It would have been obvious to one of ordinary skill in the art at the time of the invention to include PSTs into the Iaco-Ishii system because it provides a means to select correct voltage and frequency pairs which allow the processor to operate properly.

13. Referring to claim 11, this is rejected on the same basis as set forth hereinabove.

14. Claims 5-6 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iaco and Ishii as applied to claims 1, 2, 4, 7-10, 12 and 15 above, and further in view of Plante et al [Plante] US Pat No 7058824.

15. Referring to claims 5 and 6, applicant(s) numerous means to trigger operation mode changes are construed to be an admission that the criticality does not reside in how the trigger is determined and hence obvious variations of one another. Iaco and Ishii do not teach monitoring a battery and adjusting an operation mode of the processor. Plante teaches monitoring a battery and adjusting a CPU performance mode accordingly [abstract and col. 16 lines 42-45]. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the battery monitoring means into the Iaco-Ishii system and adjust an operating mode based on a battery level because it would provide a means to prolong the life of the battery and allow the system to operate longer before needing a recharge or battery replacement.

16. Referring to claims 13 and 14, these are rejected on the same basis as set forth hereinabove.

Conclusion

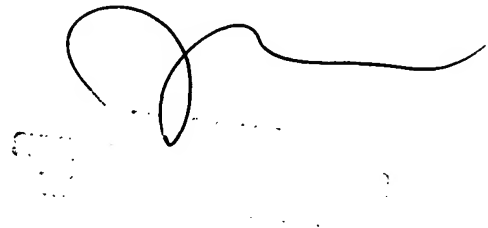
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Connolly whose telephone number is (571) 272-3666. The examiner can normally be reached on M-F 8AM-5PM (except every first Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on (571) 272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark Connolly
Examiner
Art Unit 2115

mc
June 14, 2006

A handwritten signature in black ink, appearing to be 'Mark Connolly', with a large loop and a trailing line.